

CLAIMS

1. An isolated pure DNA containing a gene participating in the production of L-homoglutamic acid, obtainable from a bacterium belonging to Flavobacterium lutescens, or a modifier which hybridizes with the gene under a stringent condition and has a function capable of recovering the L-homoglutamic acid-producing ability of a mutant of Flavobacterium lutescens which lacks the producing ability.
2. The DNA according to claim 1 wherein the gene participating in the production of L-homoglutamic acid is a DNA encoding partly or wholly at least one protein selected from the group consisting of a protein having L-lysine : 2-oxoglutaric acid 6-aminotransferase activity and a protein having piperidine-6-carboxylic acid dehydrogenase activity.
3. The DNA according to claim 2 wherein the DNA encoding the protein having L-lysine : 2-oxoglutaric acid 6-aminotransferase activity is a DNA containing the continuous base sequence from base 801 to base 2276 of SEQ ID NO: 1.
4. The DNA according to claim 3 having the base sequence of SEQ ID NO: 1 or the continuous base sequence from base 545 to base 2658 of SEQ ID NO: 1.
5. The DNA according to claim 2 wherein the DNA encoding the protein having piperidine-6-carboxylic acid dehydrogenase activity is a DNA containing the continuous base sequence from base 2855 to base 4387 of SEQ ID NO: 2.
6. The DNA according to claim 5 having the base sequence of SEQ ID NO: 2 or the continuous base sequence from base 2077 to base 4578 of SEQ ID NO: 2.
7. An autonomously replicative or integration replicative recombinant plasmid carrying the DNA according to claim 1.

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8. The recombinant plasmid according to claim 7 having the continuous base sequence from base 545 to base 2658 of SEQ ID NO: 1 and/or the continuous base sequence from base 2077 to base 4578 of SEQ ID NO: 2.

9. The recombinant plasmid according to claim 7 which can be obtained from Flavobacterium lutescens IFO 3084 (pCF213) (FERM BP-6797).

10. A transformant obtained by transforming a bacterium belonging to the genus Flavobacterium as a host with the recombinant plasmid according to claim 7.

11. A process for producing L-homoglutamic acid which comprises culturing in a medium a transformant obtained by transformation with an autonomously replicative or integration replicative recombinant plasmid carrying an isolated pure DNA containing a gene participating in the production of L-homoglutamic acid, obtainable from a bacterium belonging to Flavobacterium lutescens, or a modifier which hybridizes with the gene under a stringent condition and has a function capable of recovering the L-homoglutamic acid-producing ability of a mutant of Flavobacterium lutescens which lacks the producing ability; during or after the culture, contacting the grown transformant with L-lysine or 1-piperidine-6-carboxylic acid to convert it to L-homoglutamic acid; and recovering the thus produced L-homoglutamic acid.

12. The process for producing L-homoglutamic acid according to claim 11 wherein the gene participating in the production of L-homoglutamic acid is a DNA encoding partly or wholly at least one protein selected from the group consisting of a protein having L-lysine : 2-oxoglutaric acid 6-aminotransferase activity and a protein having piperidine-6-carboxylic acid dehydrogenase activity.

13. The process for producing L-homoglutamic acid according

to claim 12 wherein the DNA encoding the protein having L-lysine :
2-oxoglutaric acid 6-aminotransferase activity is a DNA containing the
continuous base sequence from base 801 to base 2276 of SEQ ID NO:

1.

14. The process for producing L-homoglutamic acid according
to claim 12 wherein the DNA encoding the protein having piperi-
dine-6-carboxylic acid dehydrogenase activity is a DNA containing the
continuous base sequence from base 2855 to base 4387 of SEQ ID NO:

2.

15. The process for producing L-homoglutamic acid according
to claim 11 wherein the transformant is one obtained by transforming
a bacterium belonging to the genus Flavobacterium as a host with a
recombinant plasmid which can be obtained from Flavobacterium
lutescens IFO 3084 (pCF213) (FERM BP-6797).